

WHAT IS CLAIMED IS:

1. A gas-liquid separator for gas-liquid separation performed by centrifugal force of an impeller mounted on a shaft which rotates in a casing comprising:

a discharge impeller part providing discharge force to the passing fluid formed on an axial end of the impeller; a discharge outlet of the casing disposed in a position opposite the discharge impeller part;

the other axial end of the impeller being formed to slide on the inner wall of the casing; an exhaust outlet of the casing disposed in a position opposite the sliding impeller part; vacuum means connected to the exhaust outlet; and

a suction inlet of the casing disposed in a position between the discharge outlet and the exhaust outlet.

2. The gas-liquid separator according to claim 1, wherein a cleaning fluid inlet is provided near the shaft sealing of the casing where the rotating shaft penetrates.

3. The gas-liquid separator according to claim 1 or claim 2, wherein the inlet to the casing is formed to a flow path that winds up inside the casing.

4. The gas-liquid separator according to any one of claims 1 to 3, wherein the impeller is provided with a baffle member which prevents the direct penetration of liquid near the rotating shaft to the exhaust outlet.

5. The gas-liquid separator according to any one of claims 1 to 4, wherein the impeller is provided with at least one cylindrical member coaxially attached to the impeller.

6. The gas-liquid separator according to any one of claims 1 to 5, wherein at least one of fluid throttle means, heating means, and accumulation means is inserted in the passage of the suction inlet.

7. The gas-liquid separator according to any one of claims 1 to 6, wherein cavitation causing means is inserted in the passage for gas-liquid separation.

8. The gas-liquid separator according to any one of claims 1 to 7, wherein protection means, which allows gas passage but prevents liquid passage, is inserted in the exhaust passage from the exhaust outlet to the vacuum means.

9. The gas-liquid separator according to any one of claims 1 to 8, wherein at least a portion of the discharged fluid from the discharge outlet is returned to the suction inlet.